

IN THE CLAIMS:

1. (Currently amended) A method for producing a photostimulable phosphor represented by a following General Formula (1), comprising:

subjecting phosphor particles in the photostimulable phosphor to a surface treatment by using a fluorine-containing compound after calcining the phosphor particles:

General Formula (1)



wherein M^1 is at least one alkaline earth metal atom selected from Mg, Ca, Sr, Zn and Cd; M^2 is at least one alkaline metal atom selected from Li, Na, K, Rb and Cs; Ln is at least one rare earth atom selected from Ce, Pr, Sm, Eu, Gd, Tb, Tm, Dy, Ho, Nd, Er and Yb; and x, y, a, b and c are numbers within the range of $0 \leq x \leq 0.3$, $0 \leq y \leq 0.3$, $0 \leq a \leq 0.05$, $0 < b \leq 0.2$ and $0 < c \leq 0.1$, respectively, wherein the surface treatment after calcining using the fluorine containing compound is selected to prevent deliquescence and alteration of the photostimulable phosphor relative to a photostimulable phosphor free of the surface treatment.

2. (Currently amended) A method for producing a photostimulable phosphor represented by a following General Formula (1) in a liquid phase process, comprising: subjecting phosphor particles in the photostimulable phosphor to a surface treatment with a fluorine-containing compound after calcining the phosphor particles:

General Formula (1)



wherein M^1 is at least one alkaline earth metal atom selected from Mg, Ca, Sr, Zn and Cd; M^2 is at least one alkaline metal atom selected from Li, Na, K, Rb and Cs; Ln is at least one rare earth atom selected from Ce, Pr, Sm, Eu, Gd, Tb, Tm, Dy, Ho, Nd, Er and Yb; and x, y, a, b and c are numbers within the range of $0 \leq x \leq 0.3$, $0 \leq y \leq 0.3$, $0 \leq a \leq 0.05$, $0 < b \leq 0.2$ and $0 < c \leq 0.1$, respectively, wherein the surface treatment after calcining using

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the fluorine containing compound is selected to prevent deliquescence and alteration of the photostimulable phosphor relative to a photostimulable phosphor free of the surface treatment.

3. (Original) The method of claim 1, wherein the fluorine-containing compound is obtained from a coating composition prepared by dissolving a fluorine-containing polymer with a fluorinated solvent.

4. (Original) The method of claim 1, wherein the amount of the fluorine-containing compound is from 0.2 to 20% by mass based on the photostimulable phosphor.

5. (Currently amended) A photostimulable phosphor produced by subjecting phosphor particles in the photostimulable phosphor represented by a following General Formula (1) to a surface treatment by using a fluorine-containing compound after calcining the phosphor particles:

General Formula (1)



wherein M^1 is at least one alkaline earth metal atom selected from Mg, Ca, Sr, Zn and Cd; M^2 is at least one alkaline metal atom selected from Li, Na, K, Rb and Cs; Ln is at least one rare earth atom selected from Ce, Pr, Sm, Eu, Gd, Tb, Tm, Dy, Ho, Nd, Er and Yb; and x, y, a, b and c are numbers within the range of $0 \leq x \leq 0.3$, $0 \leq y \leq 0.3$, $0 \leq a \leq 0.05$, $0 < b \leq 0.2$ and $0 < c \leq 0.1$, respectively, wherein the surface treatment after calcining using the fluorine containing compound is selected to prevent deliquescence and alteration of the photostimulable phosphor relative to a photostimulable phosphor free of the surface treatment.

6. (Original) The photostimulable phosphor of claim 5, wherein the fluorine-containing compound is obtained from a coating composition prepared by dissolving a fluorine-containing polymer with a fluorinated solvent.

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7. (Original) The photostimulable phosphor of claim 5, wherein the amount of the fluorine-containing compound is from 0.2 to 20% by mass based on the photostimulable phosphor.

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